

## PATENT ABSTRACTS OF JAPAN

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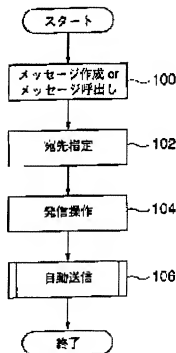
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## (54) TELEPHONE SET WITH CHARACTER INFORMATION TRANSMITTING AND RECEIVING FUNCTION

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a telephone set with a character information transmitting and receiving function by which a character message can readily be transmitted and a desired secrecy arrangement can be set depending on the telephone number of a caller.

SOLUTION: In the case of transmitting a character message, the character message is created or the character message is called during a standby state (100). When the character message to be sent is decided, its destination is designated next (102). This destination is designated by designating it from a telephone directory in which a telephone number, a start code denoting transmission of the character message, and an end code or the like denoting the end of transmission of the character message are registered in advance. When the designation of the destination is finished, then dialing is conducted (104). When this dialing is conducted, the dial number, the character message, the start code and the end code are automatically transmitted to the destination (106).



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## CLAIMS

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### [Claim(s)]

[Claim 1]In telephone with a text transmitting function which can transmit and receive a character message, Name information, telephone number information, and text transmitter start code of an other party terminal, When it has a telephone directory which can register a text sending end code and transmits said text, telephone number information of said telephone directory, Telephone with a text transmitting function, wherein an automatic transmission of a character message which text transmitter start code and a text sending end code were referred to, and was created is performed.

[Claim 2]In the telephone according to claim 1, said automatic transmission, If it detects that dialed a telephone number of a transmission destination registered into said telephone directory, and telephone of said transmission destination answered after prehension of a circuit, After transmitting text transmitter start code registered into said telephone directory with a DTMF signal and ending transmission of said text transmitter start code, Telephone with a text transmitting function transmitting a text sending end code registered into said telephone directory, and cutting said caught circuit after changing said created character message into a code of a DTMF signal, transmitting and completing transmission of said character message.

[Claim 3]In telephone with a text transmitting function which can transmit and receive a character message, It has a message registering part which it creates or edits and can register a character message which transmits waiting, Telephone with a text transmitting function calling a character message which transmits out of a character message registered into said message registering part when transmitting said character message.

[Claim 4]By transmitting a start code which transmits said character message during a telephone call in the telephone according to claim 3, calling a character message registered into said message registering part, and performing transmit operation. Telephone with a text transmitting function, wherein this character message is transmitted to an other party terminal under said telephone call.

[Claim 5]Telephone with a text transmitting function which this telephone is a cordless telephone constituted with a main phone and a cordless handset in the telephone according to claim 1 or 3, and is characterized by either said main phone or a cordless handset having said telephone directory and a message registering part.

[Claim 6]Telephone with a text transmitting function which this telephone is a cordless telephone constituted with a main phone and a cordless handset in the telephone according to claim 1 or 3, and is characterized by data of said message registering part being memorized by storage parts store of said main phone.

[Claim 7] Have the following and to a message storage part only for said main phone, and a message storage part only for a cordless handset, respectively, A character message from a telephone number registered with a main phone or a cordless handset is memorized with a telephone number, . It is characterized by displaying a message a message memorized by message storage part of said main phone was remembered to be by main phone at a message storage part of said cordless handset only on an applicable cordless handset. A cordless telephone with a text transmitting function which transmits and receives a character message while having sender number analyzing parts which analyze a telephone number of a caller terminal sent from a net.

A message storage part only for a main phone which the cordless telephone concerned consists of at least one set of a main phone and a cordless handset, and memorizes a character message of this main phone to said main phone.

\*\*\*\*\* which memorizes a character message of said cordless handset -- another message storage part only for a cordless handset.

[Claim 8] A cordless telephone with a text transmitting function, wherein said message is displayed on an indicator with a telephone number of a caller terminal in the cordless telephone according to claim 7.

[Claim 9] A cordless telephone with a text transmitting function performing call origination processing to a terminal which transmitted this message if submission operation is performed in the cordless telephone according to claim 8 while displaying said message on an indicator.

[Claim 10] A cordless telephone with a text transmitting function which will be characterized by displaying said message with a name if a telephone number of a caller terminal which transmitted said character message is beforehand registered into a telephone directory with a name in the cordless telephone according to claim 7.

[Claim 11] If said character message is received when the cordless telephone concerned is set as answering machine mode which answers automatically to mail arrival in the cordless telephone according to claim 7, A cordless telephone with a text transmitting function characterized by what is memorized by a message storage part only for said main phone, or applicable message storage part only for a cordless handset according to a telephone number of a caller terminal which transmitted said character message.

[Claim 12] A cordless telephone with a text transmitting function characterized by what is displayed on both said main phone and a cordless handset when a telephone number of a caller terminal which transmitted said character message is registered into neither said main phone nor a cordless handset in the cordless telephone according to claim 7 to 11.

[Claim 13] Have the following and to a message storage part only for said main phone, and a message storage part only for a cordless handset, respectively, A character message from a telephone number registered with a main phone or a cordless handset is memorized with a telephone number, A message memorized by a message memorized by message storage part only for said main phone and message storage part only for said cordless handset, A cordless telephone with a

text transmitting function which transmits and receives a character message while having sender number analyzing parts which analyze a telephone number of a caller terminal sent from a net characterized by what is displayed by inputting a password registered into said main phone and said cordless handset.

A message storage part only for a main phone which the cordless telephone concerned consists of at least one set of a main phone and a cordless handset, and memorizes a character message of this main phone to said main phone.

\*\*\*\*\* which memorizes a character message of said cordless handset -- another message storage part only for a cordless handset.

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to telephone and the telephone with a text transmitting function which can more specifically transmit and receive a character message.

[0002]

[Description of the Prior Art]A pager (a pager is called henceforth) is a radio receiving machine which carries out radio paging of the individual under movement, and acts as him. When calling a pager, after a calling party dials the number of a pager, connects with a center and dials his telephone number after a center response, he hangs up a telephone. In the center, the pager applicable to the telephone number which answered is called, and the telephone number of a caller terminal which received is transmitted. Since the telephone number sent to the pager from a center is displayed on an indicator by this, the user can telephone the calling party who called the pager.

[0003]The pager which can receive a character message is also developed and, generally it has spread in recent years. When transmitting a character message to such a pager from telephone, the

number of a pager is dialed first, and if a center answers, the start code for sending a character message with a tone signal (it is also henceforth called a DTMF signal) will be transmitted. And if the character of a message is dialed by figure information (for example, if it is "A" "11" etc.) and transmission of a character message ends it, a completion code will be inputted and a telephone will be hung up.

[0004]Furthermore, these days, the telephone which had a function which can transmit and receive a character message with a DTMF signal etc. also, for example by mobile telecom terminals and stationary type telephones, such as PHS and a portable telephone, is also developed and sold. Also by this kind of telephone, when transmitting a message, a calling party transmits a character message by transmitting the same operating procedure as a pager, i.e., a start code and a completion code. Some are provided with the secret function for a third party not to look at a character message, if it specifies by a number to whom it sends by the calling party side, a secret function will become effective and there will be no fear of a message being seen by others at a receiver.

[0005]

[Problem(s) to be Solved by the Invention]Thus, when a character message was sent, in the telephone in conventional technology, a start code and completion code other than a character message needed to be transmitted at every time. Such a start code and a completion code are unified into the same code in no telephones, but may differ from each other depending on the model of telephone. Therefore, when transmitting a character message, the start code and completion code according to a partner had to be transmitted, and operativity was remarkably bad.

[0006]Since the character message was created after being in the communicating state in conventional technology, there was also a problem that hour corresponding until it sends a character message became long. In conventional technology, when those who can see a character message with a secret function were specified, the BOX number which is an e-mail box for example, only for itself at the transmitting side needed to be dialed. When the transmitting side does not dial a BOX number, the character message which received will be seen by anyone. Thus, in a receiver, there was also a problem that it was uncontrollable about a secret at all.

[0007]This invention solves the technical problem of such conventional technology, and it aims at providing the telephone with a text transmitting function which can set up a desired secret according to the telephone number of the side which transmits a message while being able to send a character message easily.

[0008]

[Means for Solving the Problem]In order that this invention may solve an above-mentioned technical problem, telephone with a text transmitting function which can transmit and receive a character message has a telephone directory which can register name information, telephone number information, text transmitter start code, and a text sending end code of an other party terminal. When transmitting text, telephone number information, text transmitter start code, and a text sending end code of a telephone directory are referred to, and an automatic transmission of a created character

message is performed.

[0009]According to this invention, telephone with a text transmitting function which can transmit and receive a character message has a message registering part which it creates or edits and can register a character message which transmits waiting. When transmitting a character message, a character message which transmits out of a character message registered into a message registering part is called.

[0010]While having sender number analyzing parts which analyze a telephone number of a caller terminal sent from a net, a cordless telephone with a text transmitting function which transmits and receives a character message consists of at least one set of a main phone and a cordless handset. and \*\*\*\*\* which remembers a character message of a cordless handset to be a message storage part only for a main phone which memorizes a character message of this main phone to a main phone -- it has another message storage part only for a cordless handset. To a message storage part only for a main phone, and a message storage part only for a cordless handset, respectively, A message a message which a character message from a telephone number registered with a main phone or a cordless handset was memorized with a telephone number, and was memorized by message storage part of a main phone was remembered to be by main phone at a message storage part of a cordless handset is displayed only on an applicable cordless handset.

[0011]While having sender number analyzing parts which analyze a telephone number of a caller terminal sent from a net, a cordless telephone with a text transmitting function which transmits and receives a character message consists of at least one set of a main phone and a cordless handset. \*\*\*\*\* which remembers a character message of said cordless handset to be a message storage part only for a main phone which memorizes a character message of this main phone in a main phone -- it has another message storage part only for a cordless handset. To a message storage part only for a main phone, and a message storage part only for a cordless handset, respectively, A message memorized by a message which a character message from a telephone number registered with a main phone or a cordless handset was memorized with a telephone number, and was memorized by message storage part only for a main phone, and message storage part only for a cordless handset is displayed by inputting a password registered into a main phone and a cordless handset.

[0012]

[Embodiment of the Invention]Next, with reference to an accompanying drawing, the embodiment of the telephone with a text transmitting function by this invention is described in detail. Reference of drawing 2 shows the functional block diagram showing the embodiment of a main phone when the telephone by this invention which can transmit and receive text, such as a character message, is applied to the cordless telephone constituted by at least one set of a main phone and a cordless handset.

[0013]In drawing 2, the main phone 10 is telephone which can respond to calling telephone number display service like the number display service provided by NTT, for example, it was connected to the analog public network. This calling telephone number display service is a service function which a member makes a contract of to a net company, and if this service is joined, the telephone number of

a caller terminal can receive at the time of mail arrival.

[0014]It is connected to the telephone line (a subscriber line is called henceforth) of an office switchboard, and the polar coincidence circuit 11 is a circuit for coinciding the polarity of this line voltage, and is constituted by the full wave rectifier circuit by a diode. The ringer detector circuit 12 is a detector circuit which is similarly connected to the subscriber line of an office switchboard, and detects the call signal from an office switchboard. The ringer detector circuit 12 is connected also to the microcomputer 30, and it is notified to this computer 30 that a call signal is detected.

[0015]It is a circuit which sends out a dial pulse to an office while forming a line loop, if the hook switch circuit 14 is performed [ off-hook operation ]. The hook switch circuit 14 is constituted by two switching elements, the transistor 14a connected to the polar coincidence circuit 11, and the transistor 14b controlled by the microcomputer 30.

[0016]If off-hook operation (a response or submission operation) is performed, the microcomputer 30 will control the transistor 14b, will make the transistor 14a switch-on, and, specifically, will connect the polar coincidence circuit 11 and the speech network 16. The hook switch circuit 14 is that on-off control of the transistor 14a is carried out with the microcomputer 30, and sends out a dial pulse to an office switchboard again.

[0017]The speech network 16 is a circuit which performs 2 line-4 line conversion and VOX detection. That is, the signal of the subscriber line of a 2-wire system is changed into the signal of a 4-wire system by the speech network 16, and is sent to the DTMF transmission and reception section 18 or Kohler IDIC20. The receiver 13, the microphone 15, and the loudspeaker 17 are connected to the speech network 16.

[0018]The DTMF transmission and reception section 18 receives the DTMF signal transmitted from the other party terminal during the telephone call, and notifies the contents to the microcomputer 30, or, It is a circuit which changes into a DTMF signal the data of a character message etc. which have been sent from this microcomputer 30, and which were inputted, and sends them out. If a start code, a completion code, or a character message about character message transmission, etc. is received as a DTMF signal from the speech network 16, the DTMF transmission and reception section 18 will be changed into the data which can process the microcomputer 30, and, specifically, will be outputted to this. If the data of a start code, a completion code, or a character message related to transmission of the character message inputted from the microcomputer 30, etc., etc. is received again, DTMF receiver 18 will change and use a DTMF signal, and will output to the speech network 16.

[0019]Kohler IDIC20 is a circuit which analyzes modem data (number display data). Kohler IDIC20 analyzes the data of the message serial number which is a telephone number of the caller terminal sent from the subscriber line via the speech network 16, and, specifically, notifies the analysis result to the microcomputer 30.

[0020]The key operation section 22 is a final controlling element operated by the user in whom various keys, such as a dialing key and a function key, were allocated. By operating the dialing key and function key of this key operation section 22, call origination processing, and receipt processing or transmitting processing of a character message is performed. Creation of a character message,

edit and registration, and registration to a telephone directory are also performed by this key operation section 22.

[0021]Sound recording / playback equipment 24 is devices which perform sound recording and playback of an incoming message according to control of the microcomputer 30. That is, sound recording / playback equipment 24 will perform regeneration (or message indicator processing) of this, if the incoming message (a character message is also included) which received from the caller terminal is recorded or reproduction operation of this recorded message is performed, when the main phone 10 is answering machine mode. If the start code of text is received from a caller terminal after the main phone 10 is set as answering machine mode and answers to mail arrival, the microcomputer 30 will shift to the reception of a character message from sound recording processing of a voice message.

[0022]LCD display 26 is an indicator which displays various kinds of indicative datas which were connected to the microcomputer 30 and have been sent from this. That is, LCD display 26 displays the telephone number dialed at the time of call origination, or displays the telephone number of the caller terminal sent from the circuit at the time of mail arrival. LCD display 26 also displays the character message inputted by the key operation section 22, and the character message which received. When the registered character message is called, the contents are displayed on LCD display 26. Compander IC27, RF module 28, and the antenna 29 are the circuits for performing a cordless handset and radio.

[0023]The microcomputer 30 is a control circuit which controls the whole telephone 10, and is constituted by the input/output port 32, CPU34, RAM36, ROM38, and E<sup>2</sup>PROM39. The input/output port 32 is connected to the ringer detector circuit 12, the hook switch circuit 14, the speech network 16, the DTMF transmission and reception section 18, Kohler IDIC20, the key operation section 22, the sound recording/playback equipment 24, LCD display 26, and the compander 27. These each component and CPU34 are connected.

[0024]CPU34 inputs a signal via the input/output port 32, and controls each component connected to the input/output port 32 according to this inputted signal. That is, CPU34 performs processing accompanying call processing and the various-services function accompanying a telephone call according to the call processing program stored in ROM38. Specifically, CPU34 will register the message data into E<sup>2</sup>PROM39, if a character message is created by the user and register operation is performed. If transmit operation of a character message is performed, CPU34 will output the data of the character message which transmits to the DTMF transmission and reception section 18, and will perform transmitting processing of a character message.

[0025]According to this embodiment, the information on the name information of the transmission destination which transmits a voice call and a character message, telephone number information, text transmitter start code, a text sending end code, and others can be registered into the telephone directory (refer to drawing 8) of the telephone 10 memorized by E<sup>2</sup>PROM39. Thus, automatic-transmission processing of the character message by CPU34 is realized by registering text transmitter start code and a text sending end code into a telephone directory.



[0026]In this embodiment, the telephone number of a caller terminal to make again secret processing which displays a character message only on the main phone 10 and the cordless handset 50 can be registered into the telephone number memory map for secret displays of the main phone 10 in E<sup>2</sup>PROM39 (refer to drawing 10). The area only for a cordless handset is established in this memory map for every area only for a main phone, or cordless handset. A password can also be registered into E<sup>2</sup>PROMs 39 and 72 of the main phone 10 and the cordless handset 50 for every main phone or cordless handset.

[0027]The telephone number of the caller terminal which transmitted the character message by the number display function is known. Therefore, by referring to whether this telephone number is registered into the telephone number memory map for secret displays, If registered as a secret number of the main phone 10 or the cordless handset 50, the character message which received will be displayed on the LCD display which is an applicable indicator of the main phone 10 or the cordless handset 50. The character message which received from the terminal of the telephone number which is not registered into each exclusive area of this memory map is displayed on both the main phone 10 and the cordless handset 50.

[0028]Drawing 3 is a functional block diagram of the cordless handset 50 connected with the main phone 10 by radio. The cordless handset 50 as well as the main phone 10 is equipped with the transmitting function of text. In the cordless handset 50, in order to perform the main phone 10 and radio, compander IC58 is connected with RF module 56 CPU52, and the antenna 54 is connected to RF module 56. Compander IC58, while a voice output part is connected to the loudspeaker 62 via the amplifier 60, the microphone 64 is connected to a voice input part.

[0029]LCD display 68 which displays the key operation section 66 and telephone number which perform key input operations, a character message, etc. like the main phone 10, and ROM70 in which the processing program of the cordless handset 50 is stored are connected to CPU52. E<sup>2</sup>PROM72 [ provided with the memory area which performs registration of the telephone directory shown in drawing 8, registration of the character message shown in drawing 13, etc. ] is connected to CPU52. [0030]Next, operation of transmitting processing of the character message of the cordless handset 50 shown in the main phone 10 shown in drawing 2 and drawing 3 is explained. Drawing 1 is a flow chart which shows the operation outline of transmitting processing of the character message in the telephone with a text transmitting function by this invention. the case where a character message is transmitted -- being waiting (it goes into a communicating state -- front) -- creation of a character message or the call of a character message is performed (100). The character message which transmits is possible also for having more than one, can call the character message registered, and can also add edit to this. This character message can also be registered after edit.

[0031]If the creation or edit of a character message which transmits finishes, this will be registered as a message for transmission. Drawing 13 is an explanatory view showing an example of the message registering part into which the character message which transmits is registered. Such a message registering part is memorized by E<sup>2</sup>PROM39 of the main phone 10, and E<sup>2</sup>PROM72 of the cordless

handset 50.

[0032]After registration of the message for transmission finishes, an address is specified next (102).

Specification of this address is specified with the telephone directory registered into E<sup>2</sup>PROM39 of the main phone 10, or E<sup>2</sup>PROM72 of the cordless handset 50, for example. Drawing 8 shows two kinds (the telephone directory memory map 1, the telephone directory memory map 2) of examples of the memory map of the telephone directory of the main phone 10 and the cordless handset 50. Specification of an address may be the method (history dial) of having memorized the number which carried out call origination to the usual dialing key input or the front, choosing as them from the memory content, and specifying it as them.

[0033]As shown in drawing 8, in this example, the transmission destination to 1-100 can be registered into a telephone directory. The telephone number information which registers the telephone number of the name information in katakana, and a transmission destination as contents of registration, Specification of ringing tone, etc. can be registered as the text transmitter start code which notifies the transmission start of a character message to an other party terminal, the text sending end code which notifies the sending end of a character message to an other party terminal, and other information. Although text transmitter start code and a text sending end code are directly registered in the memory map 1, the registration number (\*\*-\*\*) of the code registered beforehand is registered in the memory map 2.

[0034]After specification of an address finishes, submission operation is performed next (104). The call origination key which performs the usual submission operation of a key operation section (it is the key operation section 22 and the key operation section 66 in the case of the cordless handset 50 in the case of the main phone 10) performs this submission operation. In the main phone 10 and the cordless handset 50, if the call origination key is pressed after registering the character message which transmits, it is programmed to perform transmitting processing of a character message.

[0035]If submission operation is performed, it will be automatically transmitted towards the address specified by the character message registered as an outgoing message (106). Thus, according to this embodiment, a character message is created or called, the address registered beforehand is specified, and transmitting processing of a character message is automatically performed only by performing submission operation. Drawing 5 and drawing 6 are the flow charts which showed the detailed content of the automatic transmission in the processing 106. Hereafter, automatic-transmission processing is explained in detail using these figures.

[0036]If the calling request of a character message occurs (108), it will be checked whether there is any address which transmits a character message (110). When there is no address, transmitting processing of a character message is ended (112). If there is an address, a circuit is caught automatically (114) and a circuit is caught, it will call to an address (116). "0331234567" is dialed when the 3rd of the telephone directory memory map 1 shown, for example in drawing 8 is specifically specified as an address. And if the partner of this telephone number answers (118), a circuit class will check DP or PB (122). When it is timing out, without a partner answering, (120) and a circuit are cut and processing is ended (138).

[0037]It returns to the processing 122, and if the circuit class in which the main phone 10 is accommodated is DP circuit, the change to a tone signal will be performed so that future send data may be transmitted with a DTMF signal (124). And the text start code "\*\*2\*" (refer to drawing 8) registered into the telephone directory is transmitted (126). An end of transmission of a text start code will send out the character message beforehand registered as an outgoing message (130). (128) At this time, a character message is changed into the data of the tone signal corresponding to character message data, and is transmitted from the DTMF transmission and reception section 18 (refer to drawing 2). While having transmitted the character message, as shown in the display example 400 of drawing 4, characters, such as "e-mail SOUSHIN main-actor-in-a-No-play IMASU", are displayed on the indicator (the main phone 10 is LCD display 26, and the cordless handset 50 is LCD display 68) of telephone which performed transmission of the character message.

[0038]An end of transmission of a character message will transmit the completion code which tells an other party terminal about transmission of the character message having been completed with reference to the telephone directory (134). (132) That is, "#" which is a text sending end code here is transmitted (refer to drawing 8). At this time, as shown in the display example 402 of drawing 4, characters, such as "e-mail SOUSHIN SHUURYOUSHIMASHITA", are displayed on the indicator of the telephone which transmitted the character message. After transmission of a text sending end code is completed (136), a circuit is cut and transmission of a character message is ended (138).

[0039]As mentioned above, although the case where it transmitted automatically using drawing 1, drawing 5, and drawing 6 after preparing a character message beforehand was explained, a character message can be called, for example during a telephone call (under communication), and it can also transmit to the other party. In this case, the character message is beforehand made so that a character message can be called during communication. Drawing 7 is the flow chart which showed transmitting processing of the character message under such a telephone call.

[0040]Key operation of the submission operation is carried out like usual by a key operation section (the main phone 10 is the key operation section 22, and the cordless handset 50 is the key operation section 66). The number which specifies by a dialing key, specifically specifies by the history dial which has memorized before the number which carried out call origination, and is chosen as it from there, or is registered into the telephone directory is called and specified.

[0041]If the other party answers and it comes during a telephone call (200), the text transmitter start code of this other party terminal will be transmitted (202). If the other party terminal is in the state where a character message is receivable after a mail arrival response, since the announcement of text transmitter start code, such as "push "\*"1", is sent towards a call origination side terminal, for example, it will be operated according to this. Call operation of the character message currently created beforehand is performed after transmitting text transmitter start code (204).

[0042]Since the character message registered is displayed in order on an LCD display by this call operation (206, 208), when an applicable character message is displayed by it, the call origination key is pressed and submission operation is performed by it (210). If submission operation is performed, while the tone signal corresponding to the character message data will be transmitted from the DTMF

transmission and reception section 18, the character of "e-mail SOUSHIN main-actor-in-a-No-play IMASU" shown in the display screen 400 of drawing 4 is displayed on an indicator.

[0043]An end of transmission of a character message will display the character of "e-mail SOUSHIN SHUURYOUSHIMASHITA" shown in the display screen 402 of drawing 4 on an indicator (212). The other party turns to a call origination side terminal after receiving a character message, if time progress is carried out, "finally please push #", and transmits. [ which is predetermined ] [ which is the announcement of a text sending end code ] The transmit operation of a character message is ended because a calling party transmits "#" which is a text sending end code according to this announcement (214).

[0044]In this embodiment, creation of a character message, registration, transmit operation, the register operation to a telephone directory, etc. are substantially the same in the main phone 10 and the cordless handset 50. When a different point is operated from the cordless handset 50, it is that destination information, character message information, and a transmission start command are transmitted to the main phone 10 from the cordless handset 50, and processing to the office side is performed with the main phone 10. The message registering part of a main phone can also be made to be able to memorize the message made from the cordless handset, and the main phone side can also perform all message transmission processings only with directions of transmission from a cordless handset.

[0045]Next, the outline of the reception of the character message in the cordless handset 50 shown in the main phone 10 shown in drawing 2 and drawing 3 is explained using drawing 9 - drawing 12. in addition -- in explanation of the reception of the character message in this embodiment -- the main phone 10 -- the cordless handset A and a cordless handset -- it is assumed that it has two sets of the cordless handsets of B (the cordless handset 50 in which all showed drawing 3 the functional block -- the same). The main phone 10, the cordless handset A, and the cordless handset B shall be beforehand registered into the telephone number memory map for secret displays of the main phone 10 (refer to drawing 10) in the telephone number of the origination side which performs the secret display which does not display a character message on other telephones, respectively. This telephone number memory map for secret displays may be registered also into the cordless handset 50.

[0046]Drawing 9 is a flow chart which shows operation of the reception of a character message, and explains receiving operation using the figures below. The main phone 10 will be in (300) and a communicating state by answering to the call which received a message (302). If the text transmitter start code (for example, ""\*2") which starts transmission of a character message with a tone signal (DTMF signal) during communication is received (304), mute will be carried out [ sound / transmitting microphone ] (a sound-reinforcement speaker output is also mute), and the tone signal information sent after it will be incorporated.

[0047]While it is busy, as shown in the display screen 410 of drawing 12, the character of "e-mail JUSHINSHITEIMASU" is displayed on the LCD display of the main phone 10, the cordless handset A, or the cordless handset B. And the incorporated tone signal is changed and memorized to

character string information (306). Two or more memory of a character message is possible, and as shown in drawing 11, the telephone number of time and a calling party is also combined besides a character message, and it is memorized in a main phone and the exclusive area for every cordless handset. Reception will be ended, if a text sending end code is received or (308) it is timing out (310).

[0048]For example, this character message is received in the midst of talking over the telephone with the main phone 10, A secret starts the main phone 10 and the contents of the message are not displayed on the case of a number with the partner only for a cordless handset who has telephoned, i.e., the telephone number into which the cordless handset A is registering the secret display, (312, 316). Therefore, as shown in the display screen 412 of drawing 12, it is displayed on LCD display 26 of the main phone 10 as "e-mail JUSHINSHUURYOUSHIMASHITA." This message is stored in the exclusive area of the cordless handset A of the incoming-message character message memory map in E<sup>2</sup>PROM39 of the main phone 10 shown in drawing 11.

[0049]If the terminal which transmitted the message is the telephone number registered with the main phone 10, the contents of the character message are displayed on LCD display 26 (314), and are stored in the exclusive area of the main phone of an incoming-message character message memory map. If this telephone number is registered into the telephone directory of the main phone 10 shown in drawing 8, that name will also be displayed on LCD display 26. The display screen 416 of drawing 12 shows the example, "Kenwood" is displayed as a name and "A HAPPYNEW YEAR" is displayed on the following line as a character message here, respectively.

[0050]If it is the telephone number into which the partner who has telephoned registered the secret display with other cordless handsets B or main phones 10 when the cordless handset A receives a message during a telephone call, a secret will start and the contents of the message will not be displayed. As mentioned above, as shown in the display screen 412 of drawing 12, it is displayed on LCD display 68 of this cordless handset A as "e-mail JUSHIN SHUURYOUSHIMASHITA." The message is stored in the exclusive area of the main phone 10 or the cordless handset B shown in drawing 11.

[0051]When either the main phone 10 the cordless handset A or the cordless handset B receives a character message from the terminal of the telephone number which has not registered the secret display, a character message is displayed on all the main phones 10, the cordless handsets A, and cordless handsets B.

[0052]If it returns to drawing 9 and a character message is received in an auto answer according [ a mail arrival response at Step 300 ] to answering machine mode, it distinguishes whether it is which character message of the cordless handsets A and B or the main phone 10, and stores in the exclusive area where an incoming-message character memory map corresponds. Thereby, when seeing a message after going home, the telephone number of the terminal which transmitted the character message can be seen only with the cordless handsets A and B or the main phone 10 which carried out secret registration. In the auto answer by answering machine mode, line disconnection processing is performed after receiving a character message (318, 320), and when that is not right, it

shifts to a talk state (318, 322).

[0053]When it received, for example while having been out in the message addressed to the cordless handset A, or when it receives during the telephone call of other cordless handsets or a main phone, after reception of a message finishes, it is reported that there was a newly-arrived message from a main phone to a cordless handset. a cordless handset -- the cordless handset which received the message addressed to A -- A calls a message from the memory map shown in drawing 11, and displays it on LCD display 68. The display screen 414 of drawing 12 shows this display example. The character message "ASHITA 7 JINISHUUGOU" is shown in this by the telephone number of "0451234567", and the line under it.

[0054]Call origination can be given to the partner who performed message transmission if capturing operation (off-hook) of a circuit is performed during the check of the state which shows the display screen 414 of drawing 12, i.e., a message. A reply message can also be created during a check. When the telephone number remembered to have mentioned above with the message is a telephone number by which name registration is carried out at the telephone directory, it is displayed with a message instead of a partner's name being a telephone number, but call origination can be given to that partner if capturing operation of a circuit is performed even in this case. The address after making a message can be chosen also from the history of the incoming-message character message memory map shown in drawing 11.

[0055]If the password is registered into each cordless handset 50 or main phone 10, it can switch to either the mode in which a character message etc. can be read or the mode which cannot be read. It becomes possible to prevent a character message being seen by the third party by making it not become the mode which can be read if a user does not input a password. If this password is made other operation locks and combination, the memory which this takes can be managed with one.

[0056]As mentioned above, as explained in detail, according to this embodiment, there are the following effects in transmitting processing of a character message. A message can be created without being conscious of how the code of a character is changed into a tone signal. For example, also when a mother sends a message to a child's pager from a house, a message can be made easily. Since they can be registered, if the regular pattern ("HAYAKUKAETTEKINASAI") etc. are registered, the created character message can call immediately and can perform message transmission. [ two or more ] Since even the place cut from the place which specifies an address, only operates transmission and is telephoned is made to automatic processing, operation is dramatically easy.

[0057]Since text transmitter start code can be registered arbitrarily, message transmission can be performed without being conscious of the difference in the transmitter start code in an other party terminal. If a number is registered into a telephone directory, it is made to correspond to this and text transmitter start code is registered, the partner's start code can be automatically added only by choosing an address from a telephone directory. Since a message can be chosen and it can transmit during a telephone call, according to a partner's timing, the made messages (guidance etc.) can also be transmitted easily. Such operation can be similarly performed regardless of the main phone 10

and the cordless handset 50. Even when two or more messages can be created and it transmits from the cordless handset 50 even a case [ the cordless handset 50 ], it is available in the same sequence as the main phone 50.

[0058]According to this embodiment, there are the following effects in reception of a character message. There is no fear of the ability to see the contents only by registering the number of the partner who sends a message as only for oneself, even when other persons receive the message addressed to themselves. Since the message received during absence can also be automatically distributed according to the contents of registration, the message for itself can be seen only by itself. Even when the message is contained while he did not know, it can know by display. It can telephone again easily [ the partner who gave the message ]. If it is telephones with this function, the message of a reply can be created and it can transmit to a partner easily.

[0059]As mentioned above, although the embodiment of the telephone with a text transmitting function by this invention was described, this invention in particular is not limited to the embodiment mentioned above. That is, in the case of the automatic transmission, in this embodiment, it presupposed that the number registered into the telephone directory is chosen, but the telephone number of a transmission destination may be transmitted by the dialing key or a history dial. Even in this case, it is referred to whether the telephone number transmitted is registered into the telephone directory. And if are registered, and the automatic transmission of a message is performed by the start code and completion code and it is not registered, the automatic transmission of a message is performed by the default start code and completion code which have been decided beforehand.

[0060]Although the character message created with the cordless handset 50 presupposed that it is stored in E<sup>2</sup>PROM72 of the cordless handset 50 in this embodiment, it may store in E<sup>2</sup>PROM39 of the main phone 10. Thus, if the character message created with the cordless handset 50 is memorized in the memory of the main phone 10, it will be only directions of the transmission from the cordless handset 50, and processing of the rest will be possible in the main phone 10 side. Although this invention was applied to the cordless telephone constituted with a main phone and a cordless handset in this embodiment, it is not limited to such a cordless telephone, and it is especially applicable if it is the terminal provided with the telephone function.

[0061]

[Effect of the Invention]Thus, according to the telephone with a text transmitting function of this invention, while being able to send a character message easily, it becomes possible to set up a desired secret according to the telephone number of an origination side.

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[Translation done.]

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damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
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- 3.In the drawings, any words are not translated.

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## DESCRIPTION OF DRAWINGS

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### [Brief Description of the Drawings]

[Drawing 1]The flow chart which shows the operation outline of transmitting processing of a character message as an embodiment of the telephone with a text transmitting function by this invention.

[Drawing 2]The functional block diagram of the main phone in which an embodiment is shown for the telephone with a text transmitting function by this invention.

[Drawing 3]The functional block diagram of the cordless handset in which an embodiment is shown for the telephone with a text transmitting function by this invention.

[Drawing 4]The figure showing an example of a screen display at the time of the end of message transmission under message transmission.

[Drawing 5]The flow chart which shows detailed operation of the automatic-transmission processing in transmitting processing of the character message shown in drawing 1.

[Drawing 6]The flow chart following drawing 5 in which detailed operation of the automatic-transmission processing in the transmitting processing shown in drawing 1 is shown.

[Drawing 7]The flow chart which shows the operation in the case of transmitting a character message during a telephone call.

[Drawing 8]The telephone directory memory map in which an example of the contents of registration of a telephone directory provided in each of a main phone and a cordless handset is shown.

[Drawing 9]The flow chart which shows the embodiment of operation of the character message reception of the telephone with a text transmitting function by this invention.

[Drawing 10]The explanatory view showing an example of the telephone number memory map for secret displays which registers the telephone number which performs a secret display.

[Drawing 11]The explanatory view showing an example of an incoming-message character message memory map which stores the character message which received.

[Drawing 12]The figure showing each example of a screen display in the case of the telephone number registered into the history check and telephone directory of the character message which were received during reception of a character message, and after reception.

[Drawing 13]The explanatory view showing an example of the message registering part registered for every main phone or cordless handset.

### [Description of Notations]

10 Main phone

11 A polar coincidence circuit



12 Ringer detector circuit  
14 Hook switch circuit  
16 Speech network  
18 DTMF transmission and reception section  
20 Kohler IDIC  
22, 66 key operation sections  
24 Sound recording/playback equipment  
26, 68 LCD displays  
27 and 58 Compander IC  
28 RF module  
29 and 54 Antenna  
30 Microcomputer  
32 Input/output port  
34, 52 CPU  
36 RAM  
38, 70 ROM  
39, 72 E<sup>2</sup>PROM  
50 Cordless handset

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[Translation done.]

\* NOTICES \*

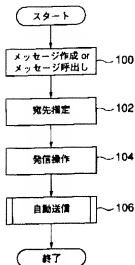
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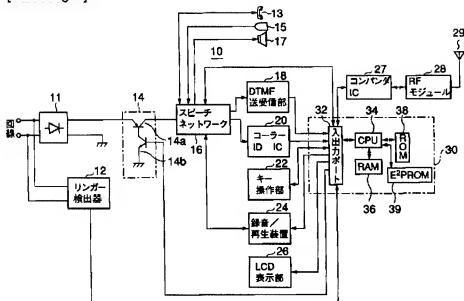
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**DRAWINGS**

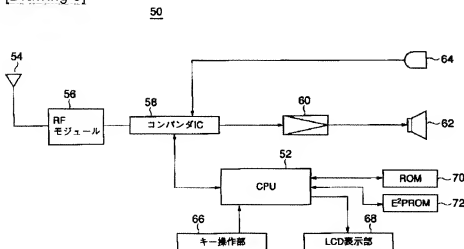
[Drawing 1]



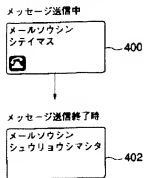
[Drawing 2]



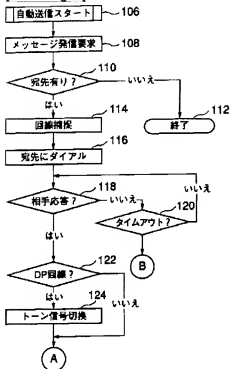
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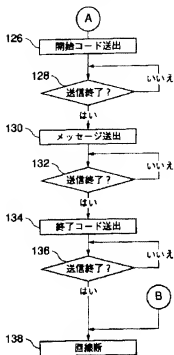
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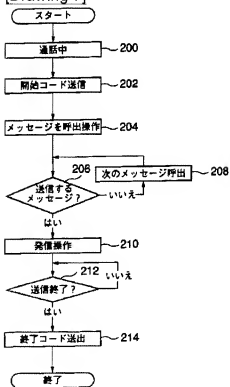
[Drawing 5]



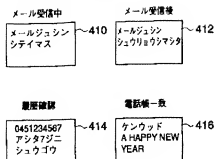
[Drawing 6]



[Drawing 7]



[Drawing 12]



[Drawing 13]

No.	文字メッセージ
1	スグカエリナサイ
2	オソクナル
3	ゴハンタベル
4	レンラクシテクダサイ
5	
6	
7	
8	
9	
10	

[Drawing 8]

例1: 電話帳メモリマップ1

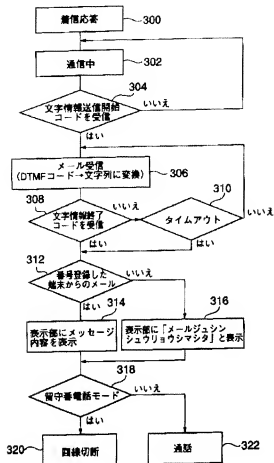
No.	名前情報	電話番号情報	文字情報送信 開始コード	文字情報送信 終了コード	その他情報 (例: 呼出音)
1	アオキ    x x x	0 3 1 2 3 4 5 6 7 8	* 2 * 2	#	呼出音A
2	カトウ    x x x	0 5 5 1 2 3 4 5 6 7	* 5 * 5	# 1	呼出音B
3	サトウ    x x x	0 3 3 1 2 3 4 5 6 7	* 2 * 2	#	呼出音B
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
100	ワタナベ    x x x	0 9 1 2 3 4 5 6 7 8	* * 9	# 2	呼出音C

例2: 電話帳メモリマップ2

No.	名前情報	電話番号情報	文字情報送信 開始コード	文字情報送信 終了コード	その他情報 (例: 呼出音)
1	アオキ    x x x	0 3 1 2 3 4 5 6 7 8	①	④	呼出音A
2	カトウ    x x x	0 5 5 1 2 3 4 5 6 7	②	⑤	呼出音B
3	サトウ    x x x	0 3 3 1 2 3 4 5 6 7	①	④	呼出音B
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
100	ワタナベ    x x x	0 9 1 2 3 4 5 6 7 8	③	⑥	呼出音C

- ① \* 2 \* 2      ④ #  
② \* 5 \* 5      ⑤ # 1  
③ \* \* 9      ⑥ # 2

[Drawing 9]



[Drawing 10]

シークレット表示用電話番号メモリマップ例

No.	親機用	子機A用	子機B用
1	0427・.....	050・.....	045・.....
2	080・.....	050・.....	033・.....
...	...	...	...
97	045・.....	050・.....	045・.....
98			
99			
100			

[Drawing 11]

着信文字メッセージメモリマップ例

No.	親機用			子機A用			子機B用		
	メッセージ	番号	時刻	メッセージ	番号	時刻	メッセージ	番号	時刻
1	オソク ナリマス	0427...	8/10 19:18	アシタハジ ハンニヘンコウ	050...	8/18 16:48	アスキヤナン ニロジ	045...	8/21 10:00
2	ゴハンイラナイ ユミ	公衆	7/28 18:48	アシタハジ ニヘンコウ	050...	8/18 18:25	ノートカシテ	033...	8/20 23:00
3					050...	8/14 17:55	アシタヒマ?	045...	8/20 21:48
4	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	.
10									

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[Translation done.]